

4.4.4.1 PBD016 – BUILDING 371 CLUSTER CLOSURE PROJECT

Approach

The following comments, concerns and recommendations are the result of the team’s review of those portions of the 2006 Closure Project Baseline (CPB) Schedule we felt were critical to site closure as scheduled in 2006. We did not review all of the 2006 CPB Schedule assumptions, scope and sequence; we reviewed a representative set of the Work Authorization Documents (WADs) within several critical Project Baseline Descriptions (PBDs). The comments below are organized by Work Authorization Documents (WADs) and Work Breakdown Structures (WBSs) reviewed in conjunction with the B371/374 Cluster Closure. The WADs reviewed in connection with the B371/374 Cluster Closure are:

- WAD 009 B371 94-3 Safety Upgrade Project
- WAD 019 B371 Liquid Stabilization Project
- WAD 031 371 Cluster Project
- WAD 059 IAEA Project

Basis & Assumption Issues

WAD 031 – 371/374 Cluster Project

K-H Project Management Plan Assumption	Comment
1. The facility is maintained at an operability of a minimum level of 90% for required nuclear operations.	The basis for this can not be verified with the available information. It is also unclear how this is incorporated into the 2006 CPB Schedule activity Durations.
2. No major discovery issues which affect authorization basis (a USQ) or criticality safety impact the ability to perform SNM Removal/Deactivation, Decommissioning and Mission Work simultaneously.	It is unclear from the information whether SNM Removal/Deactivation, Decommissioning and Mission Work can actually be performed simultaneously.
3. Regulatory authorities approve onsite waste storage plans to support SNM and D&D operations. External stakeholders do not prevent storage in tents.	The 2006 CPB does not appear to include any contingency plans for items like these.
4. Specific D&D assumptions are included in the BOE.	The May 1999 Revision 2 of the Facility Disposition Cost Model states the schedule for facility decommissioning is based on Revision 7 of the 2006 Facility Disposition Plan (“Eye Chart”). There are discrepancies noted below (Schedule Development Issues) between the P3 electronic copy of 2006 CPB Schedule and the “Eye Chart.”
5. Work required to be accelerated into FY99 to achieve closure by 2006 is funded and executed in FY99.	No comment

6. The regulatory agencies will adhere to document review schedules as described in RFCA.	It is not known at this time if the appropriate regulatory agencies have been provided K-H's forecasts for approvals and if they have accepted the approval forecasts as shown in the 2006 CPB Schedule.
7. The regulatory agencies will approve the concept of an overall IA Characterization Plan that enables site specific planning information to be added as addenda.	It is not clear from the information who will approve this Plan or what impact it will have on the schedule if it is not approved.

Scope Issues

The scope of deactivation, decommissioning, decontamination, dismantlement and demolition activities is not clearly identifiable based on the PBD for WAD 31 and the coding structure of the 2006 CPB Schedule. This issue is further explained within the Schedule Development Issues below.

WAD 019 – B371 Liquid Stabilization Project

1. It appears time is not clearly identified for the engineering support packages which are the results of the room walkdowns as outlined in the section of PBD shown below. We recommend that K-H identify where time is allotted in the 2006 CPB Schedule for this deliverable or make the necessary modifications to the 2006 CPB Schedule.

Room walkdowns (W/Ds) provide the basis for the draining procedures. W/Ds of all rooms within the twelve areas are included. After W/Ds are complete for each area, an evaluation of the area is done to identify drain points. The deliverable is an engineering support package. Based on lessons learned from B771, the evaluation activity also ended up including identification of purge/hard vacuum paths.

WAD 031 – 371/374 Cluster Project

1. It appears that the following activities are the only utility deactivations within this WAD and are therefore not forecast as outlined in the PBD. The PBD states that the deactivation of utilities will begin to occur in FY02.

Utility Systems: No utility systems are planned to be deactivated/de-energized or removed in FY00 or FY01. Utility shutdowns will begin to occur in FY02, FY03, and will be completed in FY04.

The activities below do not agree with this statement as they reflect Utility System Dissolution finishing by FY01. We recommend that the 2006 CPB Schedule and the PBD be brought into alignment with each other.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D1Q31ST005	Set 5 B371 Utility & Dissolution - Deact/SNM Rem	123	18-Oct-00*	12-Apr-01	190
D1QEDIS170	Set 5, Utility Areas & Dissolution	130	13-Apr-01	16-Oct-01	1,015
D1QEDIS175	Set 5, Utility Areas & Dissolution	15	17-Oct-01	6-Nov-01	1,015

* asterisk indicates manually constrained date

Schedule Development Issues

It is noted that the following activities within WAD 031 do not appear to meet K-H's Standard 10 Scheduling requirement:

A. Activity Durations/Level of Detail. Current FY activities and FY+1 activities will generally be two working weeks to three months in duration, except for procurement, regulatory actions, or level-of-effort activities, which do not have intermediate points for performance measurement. Longer term durations for true level-of-effort activities are permissible. Activities scheduled from FY+2 through completion will have durations reflecting the level of scope development.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D1Q0299M20	Remove Combustible Materials from B371 Rm2327	111	26-Apr-99	30-Sep-99	1
D1Q0299M30	Strip out Decontaminate B371 224 Plenum	134	22-Mar-99	28-Sep-99	255
D1Q31CT300	B371 Cooling Tower Construction Installation	120	15-Mar-00	31-Aug-00	1
D1Q31DR010	B371 Label Active Piping and Systems	218	22-Nov-99	29-Sep-00	190
D1Q31ST002	Set 2 B371 Main Aqueous Process - Deact/SNM Rem	334	1-Oct-99	25-Jan-01	12
D1Q31ST003	Set 3 B371 Mission Specific - Deact/SNM Rem	421	18-Jan-00	11-Sep-01	12
D1QSS00A05	Strip out Decontaminate B371 Room 1111	190	1-Oct-99	29-Jun-00	64
D1QSS00A10	B371 Disposition of Crates as Waste	190	1-Oct-99	29-Jun-00	64

This creates a concern for the schedule accuracy based on the level of detail as reflected by the activity durations. We recommend that K-H review the Standard 10 requirement and the 2006 CPB Schedule exceptions and make the necessary modifications to the 2006 CPB Schedule.

WAD 009 – Safety Upgrade Project

1.1.04.07.01.02 – B371 Near Term Safety Upgrades

1. It appears that the following activities representing facility upgrades were deleted from the 2010 CPB Schedule to accelerate the completion of the PBD 004 SNM Capital Support Project by three years. The basis for the deleted scope is unknown and we recommend that K-H confirm that this scope is no longer required or identify where the scope has been incorporated into other 2006 CPB Schedule activities.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
A9E12CNH20	Mitigate SQUG Findings, Const., FY00	127	1-Oct-99	31-Mar-00	128
A9E12PM122	Project Management Support, Capital FY00	254	1-Oct-99	29-Sep-00	1
A9E12CNH60	1101/1208 Storage Rack, Const., FY00	126	1-Nov-99*	28-Apr-00	108
A9E12CNH40	1101/1208 Ceiling, Const., FY00	107	1-Dec-99*	1-May-00	107
A9E12CN225	Cooling Tower Replacement, Procurement FY00	65	1-Feb-00*	1-May-00	107
A9E12CN226	Cooling Tower Replacement, Const. FY00	150	1-Mar-00*	29-Sep-00	1
A9E12CNH42	1101/1208 Ceiling, Const., FY01	253	2-Oct-00	28-Sep-01	1
A9E12CNH62	1101/1208 Storage Rack, Const., FY01	253	2-Oct-00	28-Sep-01	1
A9E12PM124	Project Management Support, Capital FY01	253	2-Oct-00	28-Sep-01	1
A9E12CNH64	1101/1208 Storage Rack, Const., FY02	254	1-Oct-01	30-Sep-02	0
A9E12PM126	Project Management Support, Capital FY02	254	1-Oct-01	30-Sep-02	0
A0ENDPBD04	Complete PBD 004 - SNM Capital Support Project	0		30-Sep-02	2,033

* asterisk indicates manually constrained date

2. We note that the B371 Upgrades included in WAD 009 appear to be manually constrained as opposed to being driven by the predecessor logic or activities with durations for the upgrade activity. Activity A9ECPM0401, B371 Upgrades Phase II-N2 mods, is tied (with a start to finish relationship) to Activity A9BEGWAD09, Begin WAD 009 – SNM Capital Support Project forecast to start October 1, 1998 but Activity A9ECPM0401 is constrained to complete February 24, 1999. The constraints override the logic relationships. Similarly this is true for Activities A9E12CN932, A9ECPM0402, A9ECPM0403, A9E12CN934. Additionally, it appears that Activity A9ECPM0404, B371 Upgrades Phase III- Interim Storage Upgrade, is constrained to complete September 30, 1999 when the predecessor logic would allow the activity to complete two months earlier on July 30, 1999 if not earlier. K-H has stated that this work is complete at this time. The basis for these constraints is unknown. We recommend that the constraints be explained and replaced with appropriate logic relationships if necessary.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
A9E12CN932	Fire Walls (SC-3,Ext.,S/R,&Vault), Des., FY99	63	4-Jan-99*	31-Mar-99	43
A9ECPM0401	B371 Upgrades Phase II-N2 mods	0		24-Feb-99*	0
A9ECPM0402	B371 Upgrades Phase II - Zone 3 HVAC	0		24-Feb-99*	0
A9ECPM0403	B371 Upgrades Phase II - Fine Barriers	0		24-Feb-99*	0
A9E12CN934	Fire Walls (SC-3,Ext.,S/R,&Vault), Const., FY99	85	1-Apr-99*	30-Jul-99	43
A9E12CN930	CPM-019 Upgrd Vault/ SC3 fire wall Const Sub Cmp	0		30-Jul-99	43
A9ECPM0404	B371 Upgrades Phase III- Interim Storage Upgrade	0		30-Sep-99*	0

* asterisk indicates manually constrained date

WAD 019 – B371 Liquid Stabilization Project**1.1.04.09.03.02.05 – Building 371 Decontamination**

1. It appears that the Activities within WBS 1.1.04.09.03.02.05 – Building 371 Decontamination are not tied to the Activities within 1.1.04.09.03.02.01 – Building 371 Tap and Drain or 1.1.04.09.03.02.03 – Building 371 Walkdowns activities; thus indicating that the walkdowns could possibly be performed within a contaminated area. Additionally, the following activities are manually constrained as opposed to being driven by the appropriate logic relationships. (K-H did indicate that in order to accelerate the evaluation process, walkdowns may have been performed in contaminated areas.)

Activity ID	Activity Description	Original Duration	Early Start	Early Finish
B9KDM0120	Decon Support Rm 1117 (Area 12B - Canyon)	55	15-Oct-98*	5-Jan-99
B9KDM0411	Decon Rm 3547 (Area 2B)	59	2-Nov-98*	27-Jan-99
B9KDM0201	Decon Support Rm 2317 (Area 8)	45	21-Dec-98*	23-Feb-99
B9KDM0161	Decon Support Rms 1107,1109,1127 (Area 12A)	45	25-Jan-99*	26-Mar-99
B9KDM0821	Decon Support Rm 3529 (Area 6)	56	8-Feb-99*	26-Apr-99

* asterisk indicates manually constrained date

Although these activities are reported complete, we recommend that the 2006 CPB Schedule reflect the necessary logic, (not constraints), where feasible to achieve proper sequencing of the scope of work.

WAD 025 – Industrial Zone Clusters Project**1.1.05.07.04.01 – Building 367 Decommissioning, 371T Cluster**

1. The 2006 CPB Schedule includes the following activities related to the Building 367 decommissioning:

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
C53670APEN	B367 Decommissioning Planning & Engineering	103	1-Oct-03	26-Feb-04	317
C53670BCHR	B367 Decommissioning Characterization	233	1-Oct03	30-Aug-04	338
C53670GPMG	B367 Decommissioning Project Management	254	1-Oct03	29-Sep-04	317
C53670HSUS	B367 Decommissioning Site Support	254	1-Oct03	29-Sep-04	317
C53670CSPR	B367 Decommissioning Site Preparation	23	27-Feb04	30-Mar-04	338
C53670DDEC	B367 Decommissioning Decontamination	84	31-Mar-04	28-Jul-04	338
C53670EDIS	B367 Decommissioning Dismantlement	84	31-Mar-04	28-Jul-04	338
C53670FDEM	B367 Decommissioning Demolition & Disposal	23	29-Jul-04	30-Aug-04	338

However, Buildings T371A, T371C, T371D, T371D, T371E, T371F only include the following activities:

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
C5371AAPEN	B371A Decommissioning Planning & Engineering	126	1-Oct-03	30-Mar-04	317
C5371ABCHR	B371A Decommissioning Characterization	233	1-Oct-03	30-Aug-04	338
C5371AGPMG	B371A Decommissioning Project Management	254	1-Oct-03	29-Sep-04	317
C5371AHSUS	B371A Decommissioning Site Support	254	1-Oct-03	29-Sep-04	317
C5371AFDEM	B371A Decommissioning Demolition & Disposal	107	31-Mar-04	30-Aug-04	338

It appears that time is not clearly identified for site preparation (decontamination is not required since these buildings are identified as trailers) and dismantlement. K-H has stated that site preparation and dismantlement are not required for trailers. We recommend that K-H review the activity durations since they appear excessive for Type 1 demolition.

- We also note that decontamination and dismantlement activities for Building 376 are sequenced concurrently as shown above. We recommend that the sequencing and duration of this work as reflected in the 2006 CPB Schedule be reviewed to ensure that it reflects safe and reasonable practices.

WAD 031 – 371 Cluster Project

1.1.06.02.03 – 371/374 Cluster Deactivation

- The following activities are driven by Activity DIQDEACST1, Start 371 Cluster Deactivation and tied to each other as opposed to being tied to other ongoing SNM operations such as the Caustic Waste Treatment System (CWTS) operation in Set 4 and the deactivation activities with the same set.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D1Q31DR001	B371 Set 1 Eval/Prep/Drain Non-actinide Liquids	36	1-Oct-99	19-Nov-99	100
D1Q31ST002	Set 2 B371 Main Aqueous Process - Deact/SNM Rem	334	1-Oct-99	25-Jan-01	12
D1Q31DR02A	B371 Set 2a Eval/Prep/Drain Non-actinide Liquids	49	12-Oct-99	21-Dec-99	100
D1Q31DR02B	B371 Set 2b Eval/Prep/Drain Non-actinide Liquids	50	22-Nov-99	3-Feb-00	266
D1Q31DR006	B371 Set 6 Eval/Prep/Drain Non-actinide Liquids	34	17-Jan-00	2-Mar-00	266
D1Q31DR04A	B371 Set 4a Eval/Prep/Drain Non-actinide Liquids	49	24-Jan-00	30-Mar-00	266
D1Q31DR04B	B371 Set 4b Eval/Prep/Drain Non-actinide Liquids	40	3-Mar-00	27-Apr-00	266
D1Q31DR05A	B371 Set 5a Eval/Prep/Drain Non-actinide Liquids	37	5-Apr-00	25-May-00	266
D1Q31DR05B	B371 Set 5b Eval/Prep/Drain Non-actinide Liquids	42	2-May-00	29-Jun-00	266

As reflected in the forecast dates for Set 4, the CWTS operation is ongoing at the same time as the Eval/Prep/Drain Non-actinide Liquids. Similarly, for Set 2 the deactivation work is forecast for

October 1, 1999 through January 25, 2001, concurrent with Eval/Prep/Drain Non-actinide Liquids. It is not clear if such work can be scheduled concurrently. We recommend that K-H review the sequencing of the Eval/Prep/Drain Non-actinide Liquids, SNM operations and deactivation activities to ensure that the necessary interface logic is reflected in the 2006 CPB Schedule.

2. We note that Activity D1Q31DR010, B371 Label Active Piping and Systems is logically tied and begins subsequent to the finish of Activity D1Q31DR001, B371 Set 1 Eval/Prep/Drain Non-actinide Liquids. It appears the labeling activity should begin concurrently or before evaluation. We recommend that the sequencing of this work be reviewed to ensure that it reflects safe and reasonable practices.
3. The basis of constraining the start of Activity D1QSSDA010, B371 Deactivation Hiring/Training/Clearances to April 26, 1999 is unknown. We also note that Activity D1Q31TRN10, B371 Training Liquids Team for Deactivation is not logically tied to Activity D1QSSDA010. Currently the Activity is driven only by Activity D1Q31DR010, B371 Label Active Piping and Systems. We recommend that K-H review the logic relationships for the hiring and training sequence so all appropriate relationships are represented (i.e., it appears that Training Liquids Team for Deactivation could begin prior to completing Hiring/Training/Clearances).
4. Activity D1Q31ST001, B371 Set 1 Attic & Chem Makeup - Deactivation, is manually constrained to begin on October 2, 2000 when the activity's predecessor logic (Activity D1Q31DR001, B371 Set 1 Eval/Prep/Drain Non-actinide Liquids) would otherwise allow a November 20, 1999 start, nearly 12 months earlier. The basis for this constraint is unknown. We recommend that the constraint be explained and replaced with appropriate logic if necessary.
5. The following activities appear to represent the ("administrative") process for closing the MAA for 371/374 Cluster. We also note that DOE's involvement/approval is not clearly identified. We recommend that K-H identify where time is allotted for DOE's activity or make the necessary modifications in the 2006 CPB Schedule.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D1Q01CL100	Develop Plan for Closing MAA	38	2-Oct-00	22-Nov-00	226
D1Q01VA100	Vulnerability Analysis	96	27-Nov-00	11-Apr-01	226
D1Q01CL130	Complete Analysis of Scan Data	83	12-Apr-01	8-Aug-01	226
D1Q02VW100	Final Facility Scan/MAA Closure Activities	64	1-Jul-02	30-Sep-02	0
D1QMILE303	Comp CAT I/II Holdup Removal/Close B371/374 MAA	0		30-Sep-02	0

1.1.06.02.04.02 – Building 371 Decommissioning, 371/374 Cluster

1. We note that the following activities are constrained to start approximately two years after their predecessor logic completes.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D1QEDIS120	Set 3, Process Areas (as available)	255	1-Oct-03*	30-Sep-04	214
D1QEDIS130	Set 6, Fluorination Area	146	24-Oct-03*	20-May-04	169

* asterisk indicates manually constrained date

The basis for these constraints is unknown, though K-H states these constraints are due to funding. We recommend that K-H explain the reason for the constraints and replace with appropriate logic if necessary.

2. We note that the following activities are constrained to start approximately 1.5 years after their predecessor logic completes.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D1QEDIS180	Set 10, Process PuSPS, Room 3701	165	1-Oct-04*	25-May-05	116
D1QEDIS140	Set 8, Labs, Vaults, Process Areas	177	1-Oct-04*	13-Jun-05	77

* asterisk indicates manually constrained date

The basis for these constraints is unknown, though K-H states these constraints are due to funding. We recommend that K-H explain the reason for the constraints and replace with appropriate logic if necessary.

1.1.06.02.04.03 – Building 373 Decommissioning, 371/374 Cluster

1. The following activities are driven by Activity D1Q716FDEM, B371 Decommissioning Demolition/Disposal FY06 as opposed to activities within B373. The basis for the logic relationship is unknown, though K-H has stated this logic was applied in order for the decommissioning and demolition of these items to occur concurrently. Additionally, we note that all the activity durations are the same for the following activities (excluding 373CT, the budgeted costs are also in the same range) and B378 is documented as a Type 2 building. We recommend that K-H explain the reason for the ties to B371, review the activity duration and budgeted cost for B378 and make the necessary revision to the 2006 CPB Schedule.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Budgeted Cost
D1Q373X650	373CT Decommissioning Demolition	23	29-Nov-05	30-Dec-05	\$16,000
D1Q374A650	B374A Decommissioning Demolition	23	29-Nov-05	30-Dec-05	\$20,555
D1Q377X650	B377 Decommissioning Demolition	23	29-Nov-05	30-Dec-05	\$ 3,544
D1Q378X650	B378 Decommissioning Demolition	23	29-Nov-05	30-Dec-05	\$ 3,805
D1Q384X650	B384 Decommissioning Demolition	23	29-Nov-05	30-Dec-05	\$ 4,800

1.1.06.02.04.04 – Building 374 Decommissioning, 371/374 Cluster

- Building 374 Decommissioning includes only the following activities as opposed to those similar to other buildings within this cluster closure project (including planning & engineering, characterization, project management, support services, site prep, decontamination and demolition). We recommend K-H clearly identify where time is allotted for this scope and make the necessary modifications to the 2006 CPB Schedule.

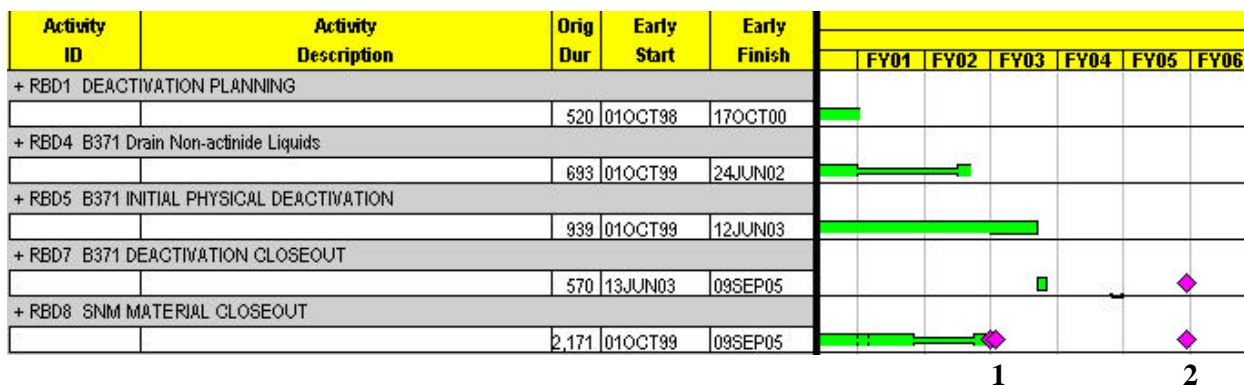
Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D1QEDIS560	Set 7, B374 Dismantlement	85	1-May-03	29-Aug-03	126
D1Q744EDIS	Set 7, B374 Dismantlement	255	2-Sep-03	31-Aug-04	126
D1Q745EDIS	Set 7, B374 Dismantlement	254	1-Sep-04	31-Aug-05	126
D1Q746FDEM	B374 Decommissioning Demolition FY06	60	4-Oct-05	29-Dec-05	104

1.1.06.02.06 – B371/374 Deactivation, 371/374 Cluster

- The Activities listed in the table below are forecast to complete subsequent to September 30, 2002, and total more than \$1 million in Budgeted Cost.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float	Budgeted Cost
D1Q31ST013	Set 13 Remaining Ventilation - Deactivation	40	9-Sep-02	1-Nov-02	166	\$ 76,606.75
D1Q31ST016	Set 16 B371 Cluster Ancillary Bldgs	61	1-Oct-02	27-Dec-02	624	\$ 76,023.35
D1Q31ST012	Set 12 Hallway/Stairwell/MCC - Deactivation	30	30-Dec-02	10-Feb-03	715	\$ 76,023.35
D1Q31ST007	Set 7 B374 - Deactivation	84	3-Jan-03	30-Apr-03	126	\$ 888,223.14
D1Q31ST014	Set 14 B371 Cluster Outside Tnks - Deactivation	30	1-May-03	12-Jun-03	587	\$ 76,023.35
TOTAL						\$1,040,269.84

As shown below in the P3 image below, (1), the Milestone for Complete CATI/II Holdup Removal/Close B371/374 MAA (September 30, 2002) is approximately 9 months prior to the forecast completion of the B371 Initial Physical Deactivation in June 2003. Additionally, as noted below, (2), there will still be several activities requiring SNM stabilization forecast through September 25, 2005 (Milestone inaccurately reflects September 9, 2005). There is a potential concern of closing the MAA when an unacceptable amount of SNM remains in the building. We note that DOE's approval/involvement is not clearly identified for the MAA Closure activities. We recommend that K-H identify where time is allotted for DOE's involvement and make the necessary modifications to the 2006 CPB Schedule.



2. The 2006 CPB Schedule noted that the Completion of SNM Stabilization and Packaging Complete is forecast for June 28, 2002, and there is an Activity (D1QSNMA100 Evaluation of Method for SNM Removal after PuSPS) to address the processing of these materials through September 25, 2005 subsequent to the closure of the PuSPS. We note that DOE's approval/involvement is not clearly identified for the alternative SNM processing method activities. We recommend that K-H identify where time is allotted for DOE's involvement and make the necessary modifications to the 2006 CPB Schedule.
3. The following milestone dates appear in the 2006 CPB Schedule:
 - B371 Cluster Deactivation Closeout September 2005
 - B371 Initial Physical Deactivation June 2003
 - MAA Closure September 2002

We note that the driving logic for completing Deactivation includes all the decommissioning activities that could potentially uncover more SNM. These activities are shown below. We recommend that K-H verify that the assumptions to close the MAA with the amount of outstanding deactivation work as reflected in the 2006 CPB Schedule are reasonable and are in accordance with DOE's assumptions.

[illegible]

* asterisk indicates manually constrained date

4. It appears that the Sand/Slag and Crucible Operations completion (Activity J9KMILE218, IP - 314 Complete Shipping SS&C to SRS) is not directly tied to the deactivation and decommissioning of Set 8 (room 3602) where the Sand/Slag and Crucible Operation exists through November 30, 2000. Similarly, the Wet Repack Operations in room 3206 (J9W3206276, FY01 Rm 3206 Wet Rpk Ops 2nd Shift) continue through May 31, 2001 and the deactivation activity (Activity D1Q31ST003, B371 Set 3 Mission Specific - Deact/SNM Rem) for the same area is forecast for January 18, 2000 through September 11, 2001. The figure below shows the referenced operations and deactivation activities. It appears that due to the lack of direct logic ties between operations (or logic causing concurrency) and deactivation activities there are overlapping activities which may be in conflict. We recommend that K-H confirm that there are no conflicts between operations and deactivation as well as added the appropriate logic to the 2006 CPB Schedule.

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	FY99	FY00	FY01
1.1.04.09.04.02	RESIDUE STABILIZATION PROGRAM - WET COMB							
J9W3206276	FY01 Rm3206 Wet Rpk Ops 2nd Shift - 991KG	169	02OCT00	31MAY01	0			
1.1.04.09.04.08	SAND/SLAG AND CRUCIBLE OPERATIONS							
J9KMILE218	IP - 314 Complete Shipping SS&C to SRS	0		30NOV00*	857			
1.1.06.02.03	371/374 CLUSTER DEACTIVATION							
D1Q31ST003	Set 3 B371 Mission Specific - Deact/SNM Rem	421	18JAN00	11SEP01	12			
D1Q31ST008	Set 8 B371 Lab/Vault/Process - Deact/SNM Removal	88	25MAY01	28SEP01	190			

5. We note that the 2006 CPB Schedule includes three similar activities for the deactivation of the PuSPS and the associated Set. It appears that the cost shown in the 2006 CPB Schedule is underestimated. We recommend that K-H verify the budgeted costs as shown in the 2006 CPB Schedule associated with the deactivation of the PuSPS.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float	Budgeted Cost
B3HPUSPSD2	PuSPS - Packaging - Deactivate/Decontaminate (02)	57	1-Jul-02	30-Sep-02	0	\$51,996
D1Q31ST010	Set 10 B371 Process/PuSPS - Deact/SNM Removal	30	1-Jul-02	12-Aug-02	3	\$80,672
D1QEDIS180	Set 10, Process PuSPS, Room 3701	165	1-Oct-04*	25-May-05	116	\$48,012

* asterisk indicates manually constrained date

6. The definition and scope of “D&D” and decommissioning appears to vary across WADS. The following PBD description (portion of) for PBD 016, WBS 1.1.06.02.04, 371/374 Decommissioning, is a direct extract from the K-H Project Management Plan:

Demolition (emphasis added) includes the demolition of the roof, non-structural and structural components, slabs on grade, foundations or tunnel structures within three (3) feet of surrounding grade and, connecting structures (breezeways, overhead walkways, etc.) of the building/structure undergoing demolition and disposal of clean demolition debris. It also includes the packaging, pre-certification and movement to an identified

pickup point; (i.e., building loading dock, etc.), of contaminated wastes generated during the decommissioning effort.

“Cluster Decommissioning” appears to translate to demolition in this case. However, earlier in PBD 016 under Section 2.1, Purpose and Justification, decommissioning is defined as follows:

Decommissioning: Those activities occurring after deactivation including surveillance and maintenance, decontamination, dismantlement of the facilities within the cluster.

Not only does this create an inconsistency relative to the scope of an activity, but it also creates concern relative to the concurrency of operations, deactivation and decommissioning in close proximity. We recommend that K-H review the 2006 CPB Schedule to ensure that the Activity Descriptions accurately describe the scope of the deactivation and D&D work.

7. Figures A, B & C show a summary of Decommissioning Activities for B371 and B374 (“X” indicates activity in 2006 CPB Schedule). It appears that the B371 dismantlement activities may be those described in detail within WBS 1.1.06.02.04.02, Bldg 371 Decommissioning, 371/374 Cluster. However, this is unclear based on the definition of Decommissioning given in the PBD as outlined above. Additionally, it appears that the activities for decontamination FY03 through FY05 and Dismantlement FY05 of B374 are either missing or included elsewhere. The inconsistency in 2006 CPB Schedule activities and the PBD description give rise to concerns relative to missing scope. (Shaded areas in tables represent areas of concern) We recommend K-H review the scope of B371 as reflected in the 2006 CPB Schedule and verify that it is complete and accurately reflected.

Building 371 Activity	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Decommissioning Planning & Engineering	X	X	X	X	X	X	
Decommissioning Characterization	X	X	X	X	X	X	
Decommissioning Project Management	X	X	X	X	X	X	
Decommissioning Support Services		X	X	X	X	X	
Decommissioning Site Prep			X	X	X	X	
Decommissioning Decontamination					X	X	
Decommissioning Dismantlement							
Decommissioning Demolition							X

(K-H has stated that the Building 371 dismantlement activities are included in the Sets in WBS 1.1.06.02.04.02, Building 371 Decommissioning)

Figure A

Building 374 Activity	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Decommissioning Planning & Engineering				X	X	X	
Decommissioning Characterization				X	X	X	
Decommissioning Project Management				X	X	X	
Decommissioning Support Services				X	X	X	
Decommissioning Site Prep				X	X	X	
Decommissioning Decontamination							
Decommissioning Dismantlement				X	X		
Decommissioning Demolition							X

(K-H has stated that the Building 371 decontamination activities are included in the Sets in WBS 1.1.06.02.04.02, Building 371 Decommissioning)

Figure B

Building 374A Activity	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Decommissioning Planning & Engineering						X	
Decommissioning Characterization						X	
Decommissioning Project Management						X	
Decommissioning Support Services						X	
Decommissioning Site Prep						X	
Decommissioning Decontamination						X	
Decommissioning Dismantlement						X	
Decommissioning Demolition							X

Figure C

8. We note that the D1QMLE436, B371/374 Cluster Complete IHSS/IBC Remediation is now forecast to complete April 24, 2006, approximately 14 months earlier than the 2010 forecast of July 13, 2007. We recommend that K-H review the reduced scope of the IHSS activities and confirm that the duration of this work reflected in the 2006 CPB Schedule is reasonable based on current knowledge and DOE's expectations.

Cost & Resource Loading Issues

WAD 019 – B371 Liquid Stabilization Project

1.1.04.09.03.02.01 – Building 371 Tap and Drain

1. The following average daily labor and non-labor budget costs were reflected in the 2006 CPB Schedule. The "Area" descriptions and the necessary details were not provided at this time to support the ranges of costs between areas.

Activity ID	Activity description	Original Duration	Early Start	Early Finish	Average Daily Labor \$	Average Daily Non Labor \$
B9KBM0651	Prep to Drain - Area 5	19	1-Oct-98	27-Oct-98	\$1,232	\$1,468
B9KBM0811	Prep to Drain - Area 10	8	1-Oct-98	12-Oct-98	\$1,645	\$1,959
B9KBM0591	Prep to Drain - Area 7	15	19-Oct-98	6-Nov-98	\$ 931	\$1,098
B9KBM0540	Prep to Drain - Area 11	37	9-Nov-98	04-Jan-99	\$ 518	\$ 163
B9KBM0530	Prep to Drain - Area 8	50	3-Dec-98	12-Feb-99	\$ 540	\$ 144
B9KRM1255	Prep to Drain - Area 13	25	16-Dec-98	21-Jan-99	\$ 118	\$ 140
B9KBM0262	Prep to Drain - Area 2A	13	5-Jan-99	21-Jan-99	\$2,710	\$ 652
B9KBM0450	Prep to Drain - Area 9	26	15-Jan-99	19-Feb-99	\$1,278	\$ 310
B9KBM0820	Prep to Drain - Area 12A	23	29-Jan-99	2-Mar-99	\$1,493	\$ 310
B9KBM0262B	Prep to Drain - Area 2B	34	17-Feb-99	5-Apr-99	\$1,132	\$ 235
B9KBM0820B	Prep to Drain - Area 12B	33	22-Mar-99	5-May-99	\$ 804	\$ 166
B9KBM0490	Prep to Drain - Area 6	23	14-Apr-99	14-May-99	\$ 961	\$ 198

Average Daily Labor Range

\$118 - \$2,710

Average Daily Non-Labor Range

\$140 - \$1,959

Activity ID	Activity description	Original Duration	Early Start	Early Finish	Average Daily Labor \$	Average Daily Non Labor \$
B9KRMT821	Drain - Area 10	6	13-Oct-98	20-Oct-98	\$7,248	\$8,633
B9KRMT549	Drain - Area 11	16	16-Dec-98	8-Jan-99	\$ 542	\$ 811
B9KRMT830	Drain - Area 12A	31	19-Feb-99	2-Apr-99	\$ 825	\$1,136
B9KRMT830B	Drain - Area 12B	25	14-Apr-99	18-May-99	\$ 852	\$1,145
B9KRMT260	Drain - Area 2A	19	11-Jan-99	4-Feb-99	\$1,336	\$2,017
B9KRMT260B	Drain - Area 2B	26	15-Mar-99	19-Apr-99	\$1,460	\$2,189
B9KRMT670	Drain - Area 5	11	4-Nov-98	18-Nov-98	\$3,681	\$5,042
B9KRMT499	Drain - Area 6	17	5-May-99	27-May-99	\$ 721	\$ 962
B9KRMT600	Drain - Area 7	20	9-Nov-98	8-Dec-98	\$2,460	\$2,930
B9KRMT550	Drain - Area 8	17	18-Feb-99	12-Mar-99	\$1,044	\$1,570
B9KRMT460	Drain - Area 9	19	3-Feb-99	1-Mar-99	\$1,263	\$1,911

Average Daily Labor Range**\$542 - \$7,248****Average Daily Non-Labor Range****\$811 - \$8,633**

(K-H indicated during staff interviews that these budget costs may have been over estimated based on recorded actual costs.)

- The following average daily labor and non-labor budget costs are reflected in the 2006 CPB Schedule. The "Area" descriptions and the necessary details were not provided at this time to support the ranges of costs between areas.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Average Daily Labor \$	Average Daily Non Labor \$
B9KDM0411	Decon Rm 3547 (Area 2B)	59	2-Nov-98*	27-Jan-99	\$ 459	\$ 1,184
B9KDM0481	Decon Rm 3549 (Area 2B)	3	1-Oct-98	5-Oct-98	\$8,044	\$23,865
B9KDM0260A	Decon Rm 3553 (Area 2B)	69	16-Nov-98	24-Feb-99	\$ 393	\$ 1,167
B9KDM0620A	Decon Rm 3555 (Area 2B)	75	9-Dec-98	25-Mar-99	\$ 494	\$ 1,532

* asterisk indicates manually constrained date

We note that rooms 3553 and 3549 appear similar in size on the Building 371 Closure Planning Sequence dated 4/15/99 and yet the activity duration for room 3549 is significantly shorter than that for room 3553 which causes the Average Daily \$ to increase significantly. It is unclear from the information whether the scope of work within each space is similar. (K-H indicated during staff interviews that these budget costs may have been over estimated based on recorded actual costs.)

Average Daily Labor Range**\$459 - \$8,044****Average Daily Non-Labor Range****\$1,167 - \$23,865**

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Average Daily Labor \$	Average Daily Non Labor \$
B9KDM0120	Decon Support Rm 1117 (Area 12B - Canyon)	55	15-Oct-98*	5-Jan-99	\$241	\$1,181
B9KDM0201	Decon Support Rm 2317 (Area 8)	45	21-Dec-98*	23-Feb-99	\$282	\$ 618
B9KDM0821	Decon Support Rm 3529 (Area 6)	56	8-Feb-99*	26-Apr-99	\$ 11	\$ 27
B9KDM0490	Decon Support Rm 3531 (Area 6)	57	12-Feb-99	3-May-99	\$106	\$1,190
B9KDM0161	Decon Support Rms 1107,1109,1127 (Area 12A)	45	25-Jan-99*	26-Mar-99	\$633	\$2,266
B9KDM0140	Decon Support Rms 1125 and 2327 (Area 12B Canyon)	70	6-Jan-99	13-Apr-99	\$378	\$ 929

* asterisk indicates manually constrained date

Average Daily Labor Range

\$11 - \$633

Average Daily Non-Labor Range

\$27 - \$2,266

It appears that room 3529 is significantly smaller than the other areas represented by the above activities and yet Activity B9KDM0821 has a similar duration. We also note that the average daily costs are significantly lower than those shown here. It is unclear from the information whether the scope of work within each space is similar. (K-H indicated during staff interviews that these budget costs may have been over estimated based on recorded actual costs.)

- The following activities have an Average Daily Cost range of \$0 to \$5,762.13. Assuming the Original Durations represent a continuous work effort, we recommend that K-H verify the accuracy of the Budget Costs and Original Durations for these activities shown within the 2006CPB Schedule.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Budgeted Cost	Average Daily Cost
D1QEDIS560	Set 7, B374 Dismantlement	85	1-May-03	29-Aug-03		
D1Q744EDIS	Set 7, B374 Dismantlement	255	2-Sep-03	31-Aug-04	\$ 975,721.03	\$3,826.36
D1Q745EDIS	Set 7, B374 Dismantlement	254	1-Sep-04	31-Aug-05	\$1,463,579.80	\$5,762.13

- The following Table lists several examples where the budgeted cost reflected in the 2006 CPB Schedule appears to be under estimated. Assuming the Original Durations represents a continuous work effort, the Average Daily Cost appears to confirm that these are underestimated. We recommend that K-H verify that the activity Original Durations and Budgeted Costs are accurate or make the necessary modifications to the 2006 CPB Schedule.

Activity ID	Activity Description	Original Duration	Budgeted Cost	Average Daily Cost
D1Q31DROG1	Obtain State Approval to Store Freon Bottles	70	\$0.00	\$0.00
D1QEDIS210	Set 15, Exterior Offices	100	\$0.00	\$0.00
D1QEDIS220	Set 16, Ancillary Buildings	100	\$0.00	\$0.00
D1QEDIS250	Set 12, Halls, Stairs, MCC	60	\$0.00	\$0.00
D1QEDIS560	Set 7, B374 Dismantlement	85	\$0.00	\$0.00
D1Q377X450	B377 Decommissioning Decontamination	85	\$230.59	\$2.71
D1Q378X450	B378 Decommissioning Decontamination	85	\$233.93	\$2.75
D1Q377X850	B377 Decommissioning Support Services	233	\$806.95	\$3.46
D1Q377X250	B377 Decommissioning Characterization	211	\$979.65	\$4.64
D1Q377X750	B377 Decommissioning Project Management	233	\$1,209.86	\$5.19
D1Q377X150	B377 Decommissioning Planning & Engineering	104	\$576.13	\$5.54
D1Q378X150	B378 Decommissioning Planning & Engineering	104	\$997.54	\$9.59
D1Q01CL130	Complete Analysis of Scan Data	83	\$815.52	\$9.83
D1Q378X750	B378 Decommissioning Project Management	233	\$2,660.13	\$11.42
D1Q170T950	Tank TK170 Decommissioning (SET 14)	253	\$2,914.28	\$11.52
D1Q378X850	B378 Decommissioning Support Services	233	\$3,023.73	\$12.98
D1Q384X250	B384 Decommissioning Characterization	211	\$2,879.90	\$13.65
D1Q371H850	B371H Decommissioning Support Services	230	\$3,239.76	\$14.09
D1Q371I850	B371I Decommissioning Support Services	230	\$3,239.76	\$14.09
D1Q378X250	B378 Decommissioning Characterization	211	\$3,182.42	\$15.08
D1Q377X350	B377 Decommissioning Site Prep	22	\$345.71	\$15.71
D1Q166T950	Tank TK166 Decommissioning (SET 14)	253	\$4,194.37	\$16.58
D1Q371H250	B371H Decommissioning Characterization	233	\$3,959.79	\$16.99
D1Q371I250	B371I Decommissioning Characterization	233	\$3,959.79	\$16.99
D1Q371H150	B371H Decommissioning Planning & Engineering	103	\$1,800.17	\$17.48
D1Q371I150	B371I Decommissioning Planning & Engineering	103	\$1,800.17	\$17.48
D1Q167T950	Tank TK167 Decommissioning (SET 14)	253	\$5,046.20	\$19.95
D1Q377X550	B377 Decommissioning Dismantlement	85	\$1,728.68	\$20.34
D1Q371H750	B371H Decommissioning Project Management	230	\$5,039.79	\$21.91
D1Q371I750	B371I Decommissioning Project Management	230	\$5,039.79	\$21.91
D1Q374A850	B374A Decommissioning Support Services	233	\$5,377.43	\$23.08
D1Q224T950	Tank TK224 Decommissioning (SET 14)	253	\$6,935.98	\$27.41
D1Q371J850	B371J Decommissioning Support Services	230	\$6,479.74	\$28.17
D1Q371K850	B371K Decommissioning Support Services	230	\$6,479.74	\$28.17
D1Q381X450	B381 Decommissioning Decontamination	85	\$2,522.44	\$29.68

5. The May 1999 Revision 2 of the Facility Disposition Cost Model states the schedule for facility decommissioning is based on Revision 7 of the Resource Leveled/Unconstrained Funding/Planning in the Year Prior to Decommissioning/Associated ER Actions Incorporated chart (“Eye-Chart”). There are discrepancies noted below between the 2006 CPB Schedule (P3 electronic copy) and the “Eye Chart.” We recommend the contractor review the 2006 CPB Schedule and the “Eye-Chart” for accuracy and make any necessary revisions to either document.

- In the 2006 CPB Schedule, WBS 1.1.06.02.04.02, Bldg. 371 Decommissioning, 371/374 Cluster, indicates that decommissioning will start on October 1, 1999. The “Eye-Chart” indicates a start of FY01 (October 1, 2000).

- The following chart indicates the discrepancies between 2006 CPB Schedule and the “Eye-Chart” completion dates in this cluster:

WBS	Description	“Eye-Chart” Completion Date	2006 CPB Completion Date	# of 2006 Activities Beyond
1.1.06.02.04.02	Bldg. 371 Decommissioning, 371/374 Cluster	FY04	FY05, FY06	35
1.1.06.02.04.03	Bldg. 373 Decommissioning, 371/374 Cluster	FY04	FY05, FY06	8
1.1.06.02.04.04	Bldg. 374 Decommissioning, 371/374 Cluster	FY04	FY05, FY06	8
1.1.06.02.04.05	Bldg. 374A Decommissioning, 371/374 Cluster	FY04	FY05, FY06	8
1.1.06.02.04.06	Bldg. 377 Decommissioning, 371/374 Cluster	FY04	FY05, FY06	8
1.1.06.02.04.07	Bldg. 378 Decommissioning, 371/374 Cluster	FY04	FY05, FY06	8
1.1.06.02.04.08	Bldg. 381 Decommissioning, 371/374 Cluster	FY04	FY05, FY06	16
1.1.06.02.06	REM/CONT 371/374 Cluster High Risk IHSS	FY05	FY06	7

- The 2006 CPB Schedule does not appear to include activities for WBS 1.1.06.02.06, REM/CONT 371/374 Cluster High Risk IHSS, characterization. These activities are indicated in the “Eye-Chart” for FY02.
- The “Eye-Chart” indicates that all decommissioning work for the 371A Cluster is to occur in FY06. The 2006 CPB Schedule forecasts that all work in the following WBS’s is to be executed prior to FY06, with the exception of activity D1Q371H650, B371H Decommissioning Demolition.

WBS 1.1.06.03.04.01, Bldg. T371H Decommissioning, 371A Cluster	FY04
WBS 1.1.06.03.04.02, Bldg. T371J Decommissioning, 371A Cluster	FY04
WBS 1.1.06.03.04.03, Bldg. T371K Decommissioning, 371A Cluster	FY04
WBS 1.1.06.03.04.04, Bldg. T376 Decommissioning, 371A Cluster	FY04
WBS 1.1.06.03.04.05, Bldg. T376A Decommissioning, 371A Cluster	FY04

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